

REMARKS

The Applicant respectfully requests reconsideration in view of the following remarks and amendments. Claim 1 has been amended. Claims 2, 3, and 5 were previously cancelled. Claims 11-16 were previously withdrawn. No claims have been added. Accordingly, claims 1, 4, 6-10, 17 and 18 are pending in the Application.

I. Claims Rejected Under 35 U.S.C. §112

Claims 1, 4, 6-10, 17 and 18 are rejected under 35 U.S.C. §112, first paragraph, as allegedly failing to comply with the written description requirement. Specifically, the Examiner asserts that the scope of claim 1 includes multiple heaters, which is allegedly not disclosed in the Specification as originally filed.

Although the Examiner has not explained the manner in which claim 1 recites multiple heaters, the Applicant assumes the Examiner is arguing claim 1 implicitly recites use of multiple heaters as this claim explicitly recites a single heater (i.e. “a heater”). In response, the Applicant has amended claim 1 to recite “placing a heater proximate to one of a plurality of longitudinally displaced locations along the pipe where the pipe is to be bent” (emphasis added). As amended, claim 1 clearly recites use of a single heater which is supported, for example, by paragraph [0012] and Figure 1 of the Specification as filed. Based on this amendment, the Applicant submits that each element of amended claim 1 is clearly supported by the Specification in compliance with 35 U.S.C. §112, first paragraph. Accordingly, the Applicant respectfully requests reconsideration and withdrawal of the rejection of claims 1, 4, 6-10, 17 and 18 for failing to comply with the written description requirement.

II. Claims Rejected Under 35 U.S.C. §103

Claims 1, 4, 6, 7 and 9 are rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent Publication No. 2004/0060497 by Smith *et al.* (hereinafter “Smith”) in view of U.S. Patent No. 4,132,104 issued to Clavin (hereinafter “Clavin”) and European Application No. 1 086 760 issued to Lewis (hereinafter “Lewis”) as evidenced by *Handbook of Thermoplastic Elastomers* by Drobny (hereinafter “Drobny”). Claims 8 and 10 are rejected under 35 U.S.C.

§103(a) as being unpatentable over Smith in view of Clavin and Lewis as evidenced by Drobny as applied to claim 1 and further in view of U.S. Patent No. 4,255,378 issued to Miller *et al.* (hereinafter “Miller”). Claims 17 and 18 are rejected under 35 U.S.C. §103(a) as being unpatentable over Smith in view of Clavin and Lewis as evidenced by Drobny, and further in view of U.S. Patent No. 5,435,867 issued to Wolfe *et al.* (hereinafter “Wolfe”).

To determine obviousness of a claim: (1) factual findings must be made under the factors set forth in Graham v. John Deere Co., 383 U.S. 1, 148 USPQ 459 (1966); and (2) the analysis supporting the rejection under 35 U.S.C. § 103 should be made explicit and there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness. See MPEP §§ 2141(II), 2141(III), and 2142; KSR International Co. v. Teleflex Inc., 82 USPQ2d 1385, 1396; see e.g., MPEP § 2143 (providing a number of rationales which are consistent with the proper “functional approach” to the determination of obviousness as laid down in Graham).

In regard to claim 1, this claim recites “placing a heater proximate to one of a plurality of longitudinally displaced locations along the pipe where the pipe is to be bent, the pipe having a composite reinforcement comprising a resin and reinforcement fibers coupled thereto;...bending the pipe incrementally at each of the plurality of longitudinally displaced locations” (emphasis added). The Examiner cites paragraph [0006] of Smith as allegedly disclosing these elements of claim 1. See Office Action, Page 3. These sections of Smith disclose bending a composite reinforced pipe. See Smith, Paragraph [0006]. However, the cited sections of Smith fail to disclose that the composite reinforcement is comprised of resin and reinforcement fibers as recited in claim 1, because there is no mention of either resin or reinforcement fibers in these sections. Moreover, the Applicant has been unable to locate any sections of Smith which disclose resin or reinforcement fibers.

Further, although Clavin discloses bending a pipe which is coated with resin (see Clavin, column 3, Lines 52-55) and Wolfe discloses a method of manufacturing a pipe with reinforcement fibers (see Wolfe, column 2, line 65 through column 3, line 2), the combination of these references does not teach or suggest bending a pipe having a composite reinforcement comprising a resin and reinforcement fibers as recited in claim 1. Specifically, Wolfe clearly

teaches away from bending a pipe coated with reinforcement fibers. See Wolfe, Column 3, Line 56 through Column 4, Line 64. Wolfe discloses that bending a pipe coated with reinforcement fibers may lead to a myriad of structural integrity problems. See Id. Wolfe describes unpredictability in force distribution and premature failure of pipes coated with reinforcement fibers. Consequently, a person of ordinary skill in the art would not modify Clavin or Smith based on Wolfe to bend a pipe with reinforcement fibers, because Wolfe discloses bending a pipe coated with reinforcement fibers is error prone. Further, the Examiner has not cited and the Applicant has been unable to locate any sections of Lewis or Drobny which disclose these elements of claim 1. Thus, the Examiner has failed to establish a *prima facie* case of obviousness with respect to the recited elements of claim 1.

Further, claim 1 also recites “bending the pipe incrementally at the plurality of longitudinally displaced locations, the longitudinally displaced locations separated by a distance equal to approximately $\frac{1}{4}$ of a diameter of the pipe” (emphasis added). The Examiner relies on the combination of Clavin with Lewis to disclose these elements of claim 1. Specifically, the Examiner states that Clavin discloses bending a pipe a single 1° at increments equal to the diameter of the pipe. See Final Office Action, Pages 8 and 9. Further, the Examiner asserts that Lewis discloses bending a pipe through cumulative $\frac{1}{4}^\circ$ bends. See Id. The Examiner concludes that it would be obvious to incrementally bend the pipe of Clavin in $\frac{1}{4}^\circ$ increments at an incremental distance of $\frac{1}{4}$ the diameter the length along the pipe. See Id. However, the Examiner has failed to establish clear motivation for modifying Clavin based on incremental $\frac{1}{4}^\circ$ bends every $\frac{1}{4}$ of the diameter of the pipe.

In making a determination of obviousness, the Examiner must not rely on hindsight reasoning. See M.P.E.P. § 2145(X)(A). Specifically, the Examiner may rely on “only knowledge which was within the level of ordinary skill in the art at the time the claimed invention was made and does not include knowledge gleaned only from applicant's disclosure, such a reconstruction is proper.” M.P.E.P. § 2145(X)(A) quoting In re McLaughlin, 443 F.2d 1392, 1395, 170 USPQ 209, 212 (CCPA 1971).

Clavin discloses that a pipe can be bent 1° at increments equal to the diameter of the pipe. This is the only disclosure in Clavin regarding the spacing between bends. Further, Lewis does not disclose a distance for spacing bends. In arguing that the combination of Lewis and Clavin discloses bending a pipe incrementally every $\frac{1}{4}$ of a diameter of the pipe, the Examiner engages in impermissible hindsight driven analysis. Specifically, the Examiner argues that a person of ordinary skill in the art would modify the express teachings of Clavin, which disclose the benefits of bending a pipe at increments equal to the full diameter of the pipe, to instead bend the pipe every $\frac{1}{4}$ of the diameter of the pipe, which is not disclosed in either reference. This modification is allegedly based on the disclosure of Lewis. However, Lewis is silent in regard to the distance between $\frac{1}{4}^\circ$ bends in a pipe. The Examiner is assuming that a person of ordinary skill in the art would bend a pipe at increments equal to $\frac{1}{4}$ of the diameter of the pipe even though there is no disclosure of this cited spacing in either reference. The Applicant submits that the Examiner is basing this assumption to bend a pipe at increments equal to $\frac{1}{4}$ of the diameter of the pipe on the Applicant's disclosure, because there is no teaching or suggestion in either Clavin or Lewis to separate bends by this measurement. Therefore, the Examiner's argument is based on impermissible hindsight driven analysis, because it is based on knowledge gleaned only from Applicant's disclosure instead of the cited prior art in contradiction to M.P.E.P. § 2145(X)(A).

Thus, the Examiner has failed to establish a *prima facie* case of obviousness under 35 U.S.C. § 103, because the Examiner has not provided valid reasoning for modifying Clavin based on Lewis. Further, the Examiner has not cited and the Applicant has been unable to locate any sections of Smith or Drobny which disclose these elements of claim 1.

Therefore, for at least the reasons provided above, the combination of the prior art fails to disclose each element of claim 1. Accordingly, the Applicant respectfully requests reconsideration and withdrawal of the rejection of claim 1 on this basis.

In regard to claims 4, 6, 7 and 9, these claims depend from independent claim 1 and incorporate the limitations thereof. As discussed above, the combination of Clavin, Lewis, Smith, and Drobny does not disclose all the limitations of claim 1 which are incorporated in claims 4, 6, 7 and 9. Thus, the combination of Clavin, Lewis, Smith, and Drobny does not teach

or suggest each element of claims 4, 6, 7 and 9. Accordingly, the Applicant respectfully requests reconsideration and withdrawal of the rejection of claims 4, 6, 7 and 9 on this basis.

In regard to claims 8 and 10, these claims depend from independent claim 1 and incorporate the limitations thereof. As discussed above, the combination of Clavin, Lewis, Smith, and Drobny does not disclose all the limitations of claim 1 which are incorporated in claims 8 and 10. Further, the Examiner has not cited and the Applicant has been unable to locate any sections of Miller which cure the deficiencies of the combination of Clavin, Lewis, Smith, and Drobny. Thus, the combination of Clavin, Lewis, Smith, Drobny, and Miller does not teach or suggest each element of claims 8 and 10. Accordingly, the Applicant respectfully requests reconsideration and withdrawal of the rejection of claims 8 and 10 on this basis.

In regard to claims 17 and 18, these claims depend from independent claim 1 and incorporate the limitations thereof. As discussed above, the combination of Clavin, Lewis, Smith, and Drobny does not disclose all the limitations of claim 1 which are incorporated in claims 17 and 18. Further, the Examiner has not cited and the Applicant has been unable to locate any sections of Wolfe which cure the deficiencies of the combination of Clavin, Lewis, Smith, and Drobny. Thus, the combination of Clavin, Lewis, Smith, Drobny, and Wolfe does not teach or suggest each element of claims 17 and 18. Accordingly, the Applicant respectfully requests reconsideration and withdrawal of the rejection of claims 17 and 18 on this basis.

CONCLUSION

In view of the foregoing, it is believed that all claims now pending are now in condition for allowance and such action is earnestly solicited at the earliest possible date. If there are any additional fees due in connection with the filing of this response, please charge those fees to our Deposit Account No. 02-2666. Questions regarding this matter should be directed to the undersigned at (310) 207-3800.

Respectfully submitted,

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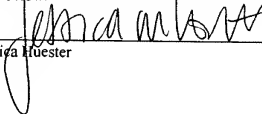
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